

# **EXHIBIT 17**

## Waymo vs. Uber: 8 Things I Learned from Anthony Levandowski Taking the Fifth

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February, Google's self-driving car spin-out [Waymo accused Anthony Levandowski](#) (<http://spectrum.ieee.org/cars-that-think/transportation/self-driving/what-waymo-wants-from-its-trade-secret-fight-with-uber>) of stealing 14,000 confidential files about the laser-ranging lidars developed while he was working there and taking them to Uber. On Friday 14 April, the engineer sat down in the San Francisco office of Waymo's lawyers to face six hours of hard questioning.

When asked what his current responsibilities were at Uber, Levandowski took the 5th, citing his right under the U.S. Constitution's Fifth Amendment not to answer questions that might incriminate him. He plead it again to questions about whether he stole the files, and again when asked if he subsequently used the files to build lidars for Uber. In fact, he took the 5<sup>th</sup> over 400 times in the course of the day.

The transcript of the deposition, released on Friday, is predictably repetitious. Despite that, it is one of the most illuminating documents to emerge from the lawsuit so far, revealing Google's early suspicions of Levandowski, details about key suppliers, previously secret code-names, and technical details of the lidars in question. Here's what I learned, and how:

### **1. Questions can be just as informative as answers**

Although Levandowski's answers were identical, I learned a lot from Waymo's questions. It seems Waymo now thinks that Levandowski was deceiving Google almost from the moment it hired him to work on Street View maps project back in 2007. Google first had concerns when it found out that Levandowski was working with his own start-ups, 510 Systems and Anthony's Robots, to build a self-driving car, as first revealed in [IEEE Spectrum](http://spectrum.ieee.org/robotics/artificial-intelligence/the-unknown-startup-that-built-googles-first-selfdriving-car) (<http://spectrum.ieee.org/robotics/artificial-intelligence/the-unknown-startup-that-built-googles-first-selfdriving-car>).

"When Google discovered that you were involved in 510 Systems and Anthony's Robots, it was concerned about potential conflicts," said Waymo's lawyer, David Perlson. "You used confidential information from Google to help develop technology at 510 Systems; correct?" He went on to accuse Levandowski of using Street View code to calibrate 510's Velodyne lidar, and in the start-up's self-driving car technology.

### **2. Levandowski names his lidars after mountains**

Perlson said that the lidar Levandowski built at 510 Systems was called Little Bear, after a mountain in Colorado. "The Fuji system at Uber is named after Mount Fuji," he went on. "And the reason that the Fuji system at Uber is named after Mount Fuji is that it is derived from Google technology that was also code named with names of mountains." Perlson revealed Google's lidars are all named Grizzly Bear, probably after Grizzly Peak in Berkeley, where 510 Systems was based. The latest Waymo lidar is called Grizzly Bear 3 or GBR3.

### **3. The side hustles kept coming**

Perlson accused Levandowski of controlling a company called [Dogwood Leasing](http://www.buzzfile.com/business/Dogwood-Leasing,-LLC-510-919-6668) (<http://www.buzzfile.com/business/Dogwood-Leasing,-LLC-510-919-6668>) that hired ex-Google contractor and 510 Systems engineer [Asheem Linaval](https://www.linkedin.com/in/asheem-linaval-44616122/) (<https://www.linkedin.com/in/asheem-linaval-44616122/>) to use Google's secrets to develop self-driving car technology. Linaval was eventually hired to Levandowski's autonomous truck start-up Otto, which Uber bought in 2016.

Waymo also accused Levandowski of founding yet another start-up, Odin Wave and feeding it confidential lidar technology. In 2013, one of Google's suppliers called Google because it had received an order from Odin Wave that was similar to parts used by the technology giant. Perlson accused Levandowski of then moving Odin Wave and renaming the company [Tyo](https://www.linkedin.com/company-beta/3819974/?pathWildcard=3819974) (<https://www.linkedin.com/company-beta/3819974/?pathWildcard=3819974>), to hide his involvement.

### **4. Be careful what you file**

The 184-page transcript of Levandowski's deposition was heavily redacted by Waymo's and Uber's lawyers to obscure commercially sensitive information. But unique among the court's filings, the transcript included an index that had been generated before the redactions were made. By cross-referencing the redactions with the index, I was able to uncover almost every word that the companies did not want made public.

For instance, I discovered that the company supplying both Google and Otto Wave with lidar components was OMW Corporation (<http://www.omwcorp.com/>), a high-tech contract manufacturing business based in the Bay Area.

## **5. A shared supplier ecosystem**

Perlson then asked Levandowski: "Did Otto select third-party vendors because of their knowledge of Google's confidential technology?" Uncovering the redactions reveals that Perlson asked whether Otto had ever used three particular optical component companies while developing its laser technology. It seems likely that these are key suppliers for Waymo's lidar.

The issue came up again in reference to Uber. In December 2015, another supplier, which redactions reveal to be Gorilla Circuits (<https://www.gorillacircuits.com/>), accidentally sent an email intended for Uber engineers to a Waymo employee. The email included a circuit design for a lidar that Waymo believes replicates its secret technology.

## **6. An Owl and a Spider lidar**

"You used confidential information from the 14,000 files you took from Google to develop lidar at Uber; correct?" Perlson asked Levandowski during the deposition. He went on to name three specific devices: the Fuji lidar that Uber is working on now; the Owl lidar built by Tyto; and, redactions reveal, a previously unknown lidar called Spider.

Spider is the pre-Fuji design that Waymo recently accused Uber of hiding, and whose existence first emerged from a filing Uber made with Nevada regulators in November. Waymo believes Spider to be essentially a copy of its Grizzly Bear 3 lidar.

## **7. Technical similarities**

The redactions also show the specific technical details in Uber's Fuji lidar design that Waymo thinks it can trace back to its own patents and trade secrets (<http://spectrum.ieee.org/cars-that-think/transportation/self-driving/what-waymo-wants-from-its-trade-secret-fight-with-uber>).

Waymo sees similarities in the spacing and placement of diodes on the Fuji's printed circuit boards (PCBs), including having tiny diodes hanging on the edge of the PCB. It also suspects that a cylindrical lens assembly and guide holes for pins are derived from confidential information that Levandowski took from Google.

In addition, Perlson asked Levandowski about Uber's progress on ion-doped laser fibers for lidars, which both companies are working on.

## 8. Levandowski's early life

Finally, Perlson let Uber's lawyers ask Levandowski a few questions that he was prepared to answer, mostly about his life and work outside Google and Uber. His responses show that Levandowski's entrepreneurship started at an early age, selling candy to fellow students in high school, then building a website to navigate photos of the school buildings.

He made his first self-driving vehicle using Java and Lego Mindstorms at UC Berkeley, before building a (partly) self-driving motorcycle for DARPA's Grand Challenge competition in 2004 (<http://spectrum.ieee.org/robotics/military-robots/sand-trap>). He also claimed to have worked on Velodyne's first commercial lidar. "After the [second Grand Challenge], I helped them get their unit from the early, early prototype that just outputted video data... into outputting Ethernet packets so that others could use it," said Levandowski.

A judge ruled Tuesday that Levandowski's Fifth Amendment rights did not extend to documents that Uber controls.

The next milestone in the epic lawsuit is a hearing on 3 May to decide Waymo's request for a preliminary injunction to halt Uber's self-driving car efforts. That could be all the more critical for Uber, given that Waymo just announced that it would expand its trial of autonomous minivans in Arizona to over 500 vehicles (<http://spectrum.ieee.org/cars-that-think/transportation/self-driving/waymo-offers-robocar-rides-to-the-public>).